

*Questions
& Answers
about . . .*

Arthritis and Exercise

*National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
National Institutes of Health
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You can also find this booklet on the NIAMS Web site
at www.niams.nih.gov/hi/topics/arthritis/arthexfs.htm.

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This booklet answers general questions about arthritis and exercise. The amount and form of exercise recommended for each individual will vary depending on which joints are involved, the amount of inflammation, how stable the joints are, and whether a joint replacement procedure has been done. A skilled physician who is knowledgeable about the medical and rehabilitation needs of people with arthritis, working with a physical therapist also familiar with the needs of people with arthritis, can design an exercise plan for each patient.

What Is Arthritis?

There are over 100 forms of arthritis and other rheumatic diseases. These diseases may cause pain, stiffness, and swelling in joints and other supporting structures of the body such as muscles, tendons, ligaments, and bones. Some forms can also affect other parts of the body, including various internal organs.

Many people use the word “arthritis” to refer to all rheumatic diseases. However, the word literally means joint inflammation; that is, swelling, redness, heat, and pain caused by tissue injury or disease in the joint. The many different kinds of arthritis comprise just a portion of the rheumatic diseases. Some rheumatic diseases are described as connective tissue diseases because they affect the body’s connective tissue—the supporting framework of the body and its internal organs. Others are known as autoimmune diseases

because they are caused by a problem in which the immune system harms the body's own healthy tissues. Examples of some rheumatic diseases are:

- Osteoarthritis
- Rheumatoid arthritis
- Fibromyalgia
- Systemic lupus erythematosus
- Scleroderma
- Juvenile rheumatoid arthritis
- Ankylosing spondylitis
- Gout

In this booklet, the term arthritis will be used as a general term to refer to arthritis and other rheumatic diseases.

Should People With Arthritis Exercise?

Yes. Studies have shown that exercise helps people with arthritis in many ways. Exercise reduces joint pain and stiffness and increases flexibility, muscle strength, cardiac fitness, and endurance. It also helps with weight reduction and contributes to an improved sense of well-being.

How Does Exercise Fit Into a Treatment Plan for People With Arthritis?

Exercise is one part of a comprehensive arthritis treatment plan. Treatment plans also may include rest and relaxation, proper diet, medication, and instruction about proper use of joints and ways to conserve energy (that is, not waste motion) as well as the use of pain relief methods.

What Types of Exercise Are Most Suitable for Someone With Arthritis?

Three types of exercise are best for people with arthritis:

- **Range-of-motion** exercises (e.g., dance) help maintain normal joint movement and relieve stiffness. This type of exercise helps maintain or increase flexibility.
- **Strengthening** exercises (e.g., weight training) help keep or increase muscle strength. Strong muscles help support and protect joints affected by arthritis.

- **Aerobic or endurance** exercises (e.g., bicycle riding) improve cardiovascular fitness, help control weight, and improve overall function. Weight control can be important to people who have arthritis because extra weight puts extra pressure on many joints. Some studies show that aerobic exercise can reduce inflammation in some joints.

Most health clubs and community centers offer exercise programs for people with physical limitations.

How Does a Person With Arthritis Start an Exercise Program?

People with arthritis should discuss exercise options with their doctors and other health care providers. Most doctors recommend exercise for their patients. Many people with arthritis begin with easy, range-of-motion exercises and low-impact aerobics. People with arthritis can participate in a variety of, but not all, sports and exercise programs. The doctor will know which, if any, sports are off-limits.

The doctor may have suggestions about how to get started or may refer the patient to a physical therapist. It is best to find a physical therapist who has experience working with people who have arthritis. The therapist will design an appropriate home exercise program and teach clients about pain-relief methods, proper body mechanics (placement of the body for a given task, such as lifting a heavy box), joint protection, and conserving energy.

Step Up to Exercise: How To Get Started

- Discuss exercise plans with your doctor.
- Start with supervision from a physical therapist or qualified athletic trainer.
- Apply heat to sore joints (optional; many people with arthritis start their exercise program this way).
- Stretch and warm up with range-of-motion exercises.
- Start strengthening exercises slowly with small weights (a 1- or 2-pound weight can make a big difference).
- Progress slowly.
- Use cold packs after exercising (optional; many people with arthritis complete their exercise routine this way).
- Add aerobic exercise.
- Consider appropriate recreational exercise (after doing range-of-motion, strengthening, and aerobic exercise). Fewer injuries to joints affected by arthritis occur during recreational exercise if it is preceded by range-of-motion, strengthening, and aerobic exercise that gets your body in the best condition possible.
- Ease off if joints become painful, inflamed, or red, and work with your doctor to find the cause and eliminate it.
- Choose the exercise program you enjoy most and make it a habit.

What Are Some Pain Relief Methods for People With Arthritis?

There are known methods to help stop pain for short periods of time. This temporary relief can make it easier for people who have arthritis to exercise. The doctor or physical therapist can suggest a method that is best for each patient. The following methods have worked for many people:

- **Moist heat** supplied by warm towels, hot packs, a bath, or a shower can be used at home for 15 to 20 minutes three times a day to relieve symptoms. A health professional can use short waves, microwaves, and ultrasound to deliver deep heat to noninflamed joint areas. Deep heat is not recommended for patients with acutely inflamed joints. Deep heat is often used around the shoulder to relax tight tendons prior to stretching exercises.
- **Cold** supplied by a bag of ice or frozen vegetables wrapped in a towel helps to stop pain and reduce swelling when used for 10 to 15 minutes at a time. It is often used for acutely inflamed joints. People who have Raynaud's phenomenon should not use this method.

- **Hydrotherapy** (water therapy) can decrease pain and stiffness. Exercising in a large pool may be easier because water takes some weight off painful joints. Community centers, YMCAs, and YWCAs have water exercise classes developed for people with arthritis. Some patients also find relief from the heat and movement provided by a whirlpool.
- **Mobilization therapies** include traction (gentle, steady pulling), massage, and manipulation (using the hands to restore normal movement to stiff joints). When done by a trained professional, these methods can help control pain and increase joint motion and muscle and tendon flexibility.
- **TENS** (transcutaneous electrical nerve stimulation) and **biofeedback** are two additional methods that may provide some pain relief, but many patients find that they cost too much money and take too much time. In TENS, an electrical shock is transmitted through electrodes placed on the skin's surface. TENS machines cost between \$80 and \$800. The inexpensive units are fine. Patients can wear them during the day and turn them off and on as needed for pain control.

- **Relaxation therapy** also helps reduce pain. Patients can learn to release the tension in their muscles to relieve pain. Physical therapists may be able to teach relaxation techniques. The Arthritis Foundation has a self-help course that includes relaxation therapy. Health spas and vacation resorts sometimes have special relaxation courses.
- **Acupuncture** is a traditional Chinese method of pain relief. A medically qualified acupuncturist places needles in certain sites. Researchers believe that the needles stimulate deep sensory nerves that tell the brain to release natural painkillers (endorphins). **Acupressure** is similar to acupuncture, but pressure is applied to the acupuncture sites instead of using needles.

How Often Should People With Arthritis Exercise?

- **Range-of-motion** exercises can be done daily and should be done at least every other day.
- **Strengthening** exercises should be done every other day unless you have severe pain or swelling in your joints.
- **Endurance** exercises should be done for 20 to 30 minutes three times a week unless you have severe pain or swelling in your joints. According to the American College of Rheumatology, 20- to 30-minute exercise routines can be performed in increments of 10 minutes over the course of a day.

What Type of Strengthening Program Is Best?

This varies depending on personal preference, the type of arthritis involved, and how active the inflammation is. Strengthening one's muscles can help take the burden off painful joints. Strength training can be done with small free weights, exercise machines, isometrics, elastic bands, and resistive water exercises. Correct positioning is critical, because if done incorrectly, strengthening exercises can cause muscle tears, more pain, and more joint swelling.

Are There Different Exercises for People With Different Types of Arthritis?

There are many types of arthritis. Experienced doctors, physical therapists, and occupational therapists can recommend exercises that are particularly helpful for a specific type of arthritis. Doctors and therapists also know specific exercises for particularly painful joints. There may be exercises that are off-limits for people with a particular type of arthritis or when joints are swollen and inflamed. People with arthritis should discuss their exercise plans with a doctor. Doctors who treat people with arthritis include rheumatologists, orthopaedic surgeons, general practitioners, family doctors, internists, and rehabilitation specialists (physiatrists).

How Much Exercise Is Too Much?

Most experts agree that if exercise causes pain that lasts for more than 1 hour, it is too strenuous. People with arthritis should work with their physical therapist or doctor to adjust their exercise program when they notice any of the following signs of strenuous exercise:

- Unusual or persistent fatigue
- Increased weakness
- Decreased range of motion
- Increased joint swelling
- Continuing pain (pain that lasts more than 1 hour after exercising)

Should Someone With Rheumatoid Arthritis Continue To Exercise During a General Flare? How About During a Local Joint Flare?

It is appropriate to put joints gently through their full range of motion once a day, with periods of rest, during acute systemic flares or local joint flares. Patients can talk to their doctor about how much rest is best during general or joint flares.

Are Researchers Studying Arthritis and Exercise?

Researchers are looking at the effects of exercise and sports on the development of musculoskeletal disabilities, including arthritis. They have found that people who do moderate, regular running have low, if any, risk of developing osteoarthritis. However, studies show that people who participate in sports with high-intensity, direct joint impact are at risk for the disease. Examples are football and soccer. Sports involving repeated joint impact and twisting (such as baseball and soccer) also increase osteoarthritis risk. Early diagnosis and effective treatment of sports injuries and complete rehabilitation should decrease the risk of osteoarthritis from these injuries.

Researchers also are looking at the effects of muscle strength on the development of osteoarthritis. Studies show, for example, that strengthening the quadriceps muscles can reduce knee pain and disability associated with osteoarthritis. One study shows that a relatively small increase in strength (20–25 percent) can lead to a 20–30 percent decrease in the chance of developing knee osteoarthritis. Other researchers continue to look for and find benefits from exercise to patients with rheumatoid arthritis, spondyloarthropathies, systemic lupus erythematosus, and fibromyalgia. They are also studying the benefits of short- and long-term exercise in older populations.

Where Can People Find More Information on Arthritis and Exercise?

- **National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)**

National Institutes of Health

1 AMS Circle

Bethesda, MD 20892-3675

Phone: 301-495-4484 or

877-22-NIAMS (226-4267) (free of charge)

TTY: 301-565-2966

Fax: 301-718-6366

E-mail: NIAMSInfo@mail.nih.gov

www.niams.nih.gov

NIAMS provides information about various forms of arthritis and rheumatic disease and bone, muscle, joint, and skin diseases. It distributes patient and professional education materials and refers people to other sources of information. Additional information and updates can also be found on the NIAMS Web site.

- **American Academy of Orthopaedic Surgeons**

P.O. Box 2058

Des Plaines, IL 60017

Phone: 800-824-BONE (2263) (free of charge)

www.aaos.org

The academy provides education and practice management services for orthopaedic surgeons and allied health professionals. It also serves as an advocate for improved patient care and informs the public about the science of orthopaedics. The orthopaedist's scope of practice includes disorders of the body's bones, joints, ligaments, muscles, and tendons. For a single copy of an AAOS brochure, send a self-addressed stamped envelope to the address above or visit the AAOS Web site.

- **American College of Rheumatology**

1800 Century Place, Suite 250

Atlanta, GA 30345

Phone: 404-633-3777

Fax: 404-633-1870

www.rheumatology.org

This association provides referrals to doctors and health professionals who work on arthritis, rheumatic diseases, and related conditions. The association also provides educational materials and guidelines.

- **American Physical Therapy Association**

1111 North Fairfax Street

Alexandria, VA 22314-1488

Phone: 703-684-2782 or

800-999-2782, ext. 3395 (free of charge)

www.apta.org

The association is a national professional organization representing physical therapists, allied personnel, and students. Its objectives are to improve research, public understanding, and education in the physical therapies.

- **Arthritis Foundation**

1330 West Peachtree Street

Atlanta, GA 30309

Phone: 404-872-7100 or

call your local chapter (listed in the telephone directory)

800-283-7800 (free of charge)

www.arthritis.org

This is the major voluntary organization devoted to arthritis. The foundation publishes a free pamphlet on exercise and arthritis and a monthly magazine for members that provides up-to-date information on all forms of arthritis. Local chapters organize exercise programs for people who have arthritis, including People with Arthritis Can Exercise (PACE) and an aquatic exercise program held in swimming pools. The foundation also can provide physician and clinic referrals.

- **Lupus Foundation of America (LFA)**

2000 L. Street, N.W., Suite 710

Washington, DC 20036

Phone: 202–349–1155 or 800–558–0121 (free of charge)

www.lupus.org

This is the main voluntary organization devoted to lupus. It also provides information on arthritis and exercise.

- **SLE Foundation**

149 Madison Avenue, Suite 205

New York, NY 10016

Phone: 212–685–4118

www.lupusny.org

This foundation supports and encourages medical research to find the cause and cure of lupus and improve its diagnosis and treatment. It also provides information on arthritis and exercise.

- **National Fibromyalgia Partnership, Inc.**

P.O. Box 160

Linden, VA 22642–0160

Phone: 866–725–4404 (free of charge)

Fax: 866-666-2727

E-mail: mail@fmpartnership.org

www.fmpartnership.org

This organization devoted to fibromyalgia provides information on arthritis and exercise.

- **Spondylitis Association of America (SAA)**

P.O. Box 5872

Sherman Oaks, CA 91413

Phone: 818–981–1616 or 800–777–8189 (free of charge)

www.spondylitis.org

This nonprofit, voluntary organization helps people who have ankylosing spondylitis and related conditions. SAA sells books, posters, videotapes, and audiotapes about exercises for people who have arthritis of the spine.

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The mission of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), a part of the Department of Health and Human Services' National Institutes of Health (NIH), is to support research into the causes, treatment, and prevention of arthritis and musculoskeletal and skin diseases, the training of basic and clinical scientists to carry out this research, and the dissemination of information on research progress in these diseases. The National Institute of Arthritis and Musculoskeletal and Skin Diseases Information Clearinghouse is a public service sponsored by the NIAMS that provides health information and information sources. Additional information can be found on the NIAMS Web site at www.niams.nih.gov.



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